Exempted Fishing Permit Application – Electronic Video Monitoring Pilot Program
Gulf of Mexico Reef Fish Shareholders' Alliance
January 19, 2017

1. The applicant's name, mailing address, and telephone number.

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2. A statement of the purpose and goals of the exempted fishery for which an EFP is needed, including justification for the issuance of the EFP.

2.1 – Purpose and Goals

We request a two-year Exempted Fishing Permit (EFP) from the National Marine Fisheries Service (NMFS) for limited testing of electronic video monitoring (EM) systems to monitor and avoid sea turtle bycatch while allowing up to eight commercial bottom longline vessels to harvest groupers and other species inside the reef fish bottom longline seasonal closure area in the eastern Gulf of Mexico (June, July and August) in 2017 and 2018. The Gulf of Mexico Reef Fish Shareholders' Alliance (Shareholders' Alliance) seeks to conduct a pilot program that builds upon multiple previous efforts to evaluate the efficacy of EM. We propose to test this innovative data collection and monitoring system for the first time in the Gulf of Mexico in a "real-time, real-world" setting in accordance with the objectives of the NMFS Southeast Region Electronic Monitoring and Reporting Regional Implementation Plan (Regional Implementation Plan).

Exemptions

For the purpose of this pilot program, the Shareholders' Alliance requests that participating vessels be exempted from the following regulations:

- 50 C.F.R. §622.35(b) - *Seasonal prohibitions applicable to bottom longline fishing for Gulf reef fish.*
- Any other necessary or appropriate regulations as determined by NMFS to carry out the pilot program

Problem and Solution

Sea turtles and commercial bottom longline fishing in the Gulf of Mexico (Gulf) overlap in both space and time. Generally speaking, an increase in sea turtle biomass and/or an increase in commercial bottom longline effort in overlapping areas may lead to increased interactions. These interactions may have negative biological consequences to the resource (e.g. sea turtle harm or mortality) and can often have negative economic consequences for fishermen (e.g. loss of gear, loss of bait, loss of directed catch, and loss of fishing time).

In response to an increase in sea turtle takes in bottom longline gear, Amendment 31 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico (Reef Fish FMP) attempted to "balance the continued operation of the bottom longline component of the reef fish fishery in the eastern Gulf while maintaining adequate protective measures for sea turtles"[1] by simultaneously implementing a number of restrictive measures including a large seasonal closed area for bottom longline fishermen, a qualifier based on historical landings, and a reduction in hooks.

The closure of this expansive area to commercial bottom longline fishing has presented a gap in the Gulf fishery-dependent dataset. For over half a decade, bottom longline catch and effort data in this area have not been able to be collected and utilized for stock assessment or management purposes during the closed season.

At the same time, commercial bottom longline fishermen must operate outside this area where fishery profitability is much lower than in areas closer to shore.

Despite the fact that EM systems have been tested in the Gulf for nearly a decade with four separate pilot programs, NMFS has identified EM as a lowest-tier priority in the region behind commercial and charter logbook development and electronic reporting testing of recreational surveys.[2] According to the Regional Implementation Plan, initial implementation procedures are anticipated to be initialized in 2017,[3] although there's concern by some in the industry that these measures won't be able to be addressed until 2018 or later.

The Shareholders' Alliance proposes to begin to address these problems by managing a limited, responsible, well-monitored commercial fishing data collection program in the bottom longline restricted area to collect important biological, social and economic data on the red grouper portion of the reef fish fishery. EM will be used to monitor sea turtle bycatch in the closed area to determine if it is an effective method for quantifying sea turtle interactions and whether or not it could be used by fishermen as a mechanism for avoiding bycatch (e.g. hotspots) while achieving red grouper optimum yield (OY). Advanced monitoring and reporting systems – including video cameras, multiple reporting platforms, and a real-time Bycatch Hotspot Avoidance Program (BHAP) – will collect valuable data and ensure that the operation of this program does not

[1] Final Rule, Amendment 31 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico, 75 Fed. Reg. 79, 21512 (April 26, 2010).

[2] National Marine Fisheries Service Southeast Region Electronic Monitoring and Reporting Regional Implementation Plan (NOAA Fisheries; January 8, 2015), 20.

[3] Ibid., 29.

negatively impact the health and recovery of the Gulf's sea turtle populations. The economic benefit of such a well-prosecuted fishery presents an opportunity to galvanize industry support around consideration for the use of EM as a voluntary and viable monitoring and enforcement tool in the Gulf's bottom longline fishery.

Goal

The goal of the EM pilot program is to:

1. Demonstrate the viability of EM for monitoring, assessing, and reducing the number and condition of sea turtle interactions in the Gulf's commercial bottom longline fishery.

Objectives

The objectives of this EM pilot program are:

1. Biological
    a. Help achieve OY in the commercial red grouper portion of the reef fish fishery.
    b. Promote the conservation of sea turtles.
2. Economic
    a. Examine the profitability of commercial red grouper longline vessels.
    b. Demonstrate that EM can be a cost-effective management tool.
3. Social
    a. Increase investment by fishermen in real-time monitoring and reporting programs.
4. Management
    a. Compel cooperative discussions on voluntary EM development, operations, management, and evaluation.
    b. Elevate the development of EM specifications in the Southeast Region.

History

Fishery Management

Records indicate that commercial fishermen plied the waters of the Gulf as early as the 1850s, initially targeting red snapper and then shifting into grouper by the 1960s.[4] As fish stocks declined through the 20th century, there was a need for management measures to be put in place to stem this trend. The original Gulf of Mexico Reef Fish FMP was finalized in 1981 and implemented in 1984. Specific goals included 1) rebuilding of the declining reef fish stocks wherever they occur within the fishery, 2) establish a reporting system for monitoring the reef fish fishery; 2) conserve and increase habitat for reef fish to increase reef fish populations and provide protection for juveniles; and 4) minimize conflicts between user groups of the resource and conflicts for space.[5]

The first restrictions on bottom longline fishing gear were a result of Amendment 1 (1990) to the Reef Fish FMP. Prohibitions were placed on the use of longlines and buoy gear for the directed harvest of reef fish inshore of the 50 fathom isobath west of Cape San Bias, Florida (8° 30' W) and inshore of the 20 fathom isobath east of Cape San alas, Florida (8° 30' W)[6] due to an increase in

[4] Endangered Species Act – Section 7 Consultation, Biological Opinion (NOAA Fisheries, September 30, 2011), 7.

[5] Final Environmental Impact Statement and Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico (NOAA Fisheries; August, 1981), 1.

[6] Amendment 1 Final Environmental Impact Statement to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico (NOAA Fisheries; January 1990), 14.

"the level of mortality and conflicts among user groups".[7] By 1992, a moratorium had been placed on new commercial reef fish fishing permits.

Throughout the 1990s and into the 2000s, reef fish management measures primarily included season lengths, trip limits, and size limits. These changed a number of times throughout this period as commercial fishing reporting requirements were introduced and evolved, and while catches declined. Further, as sea turtle interactions continued to increase, the Gulf of Mexico Fishery Management Council (Gulf Council) approved Amendment 18A to the Reef Fish FMP in August of 2006 to, among other things, require 1) vessel monitoring system (VMS) units onboard all commercially permitted reef fish vessels operating in the Gulf, and 2) vessels with commercial permits to comply with sea turtle and smalltooth sawfish release protocols and possess a specific set of release gear.[8] For commercial reef fish vessels, these sea turtle conservation measures[9] include:

- Posting onboard a copy of the document provided by NMFS titled, ''Careful Release Protocols for Sea Turtle Release With Minimal Injury."
- Posting onboard the sea turtle handling and release guidelines placard provided by NMFS.
- Maintaining on board a dipnet, short-handled and long-handled dehookers, longnose or needle-nose pliers, bolt cutters, monofilament line cutters, and at least two types of mouth openers/mouth gags (for permitted vessels with a freeboard height of 4 feet or less) that meet mandatory specifications.

The Gulf Council implemented the first[10] IFQ program in the Gulf (red snapper, Amendment 26 to the Reef Fish FMP) in 2007, designed to 1) to reduce overcapacity in the commercial sector and 2) to eliminate, to the extent possible, the problems associated with derby fishing, in order to assist the Gulf Council in achieving optimum yield.[11] Its initial success caused the Gulf Council and fishing industry to remain interested in expanding the IFQ program for grouper and tilefish species. Three years later in 2010, NMFS implemented the Grouper/Tilefish IFQ program (Amendment 29 to the Reef Fish FMP) that applied this management strategy to two additional species (red grouper and gag) and three species complexes (other shallow-water grouper, deepwater grouper, and tilefishes).

There are five species of sea turtles known to inhabit the waters of the Gulf of Mexico and all are

[7] Ibid., 14.

[8] Amendment 18A Final Environmental Assessment to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico (NOAA Fisheries; October 2005), iv.

[9] Final Rule, Amendment 18A to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico, 71 Fed. Reg. 153, 45435 (August 9, 2016)

[10] The original red snapper individual transferable quota (ITQ) program proposed in Amendment 8 to the Reef Fish FMP and approved by NMFS in 1995 was never implemented because of Congressional action taken through the 1996 Sustainable Fisheries Act to place a moratorium on the development or implementation of new ITQ programs until October 1, 2000.

[11] Amendment 26 Final Environmental Impact Statement to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico (NOAA Fisheries; July 27, 2006), 8.

protected under the Endangered Species Act (ESA):[12,13,14]

- loggerhead turtle (*Caretta caretta*)
  - Northwest Atlantic Distinct Population Segment (DPS) listed as "threatened" under the ESA.
  - First listed under the ESA in 1978.
  - Listed under CITES Appendix I.
  - Recovery Plan for the Northwest Atlantic Population of the Loggerhead Sea Turtle (*Caretta caretta*), Second Revision published in 2008.
- green turtle (*Chelonia mydas*)
  - North Atlantic DPS and South Atlantic DPS listed as "threatened" under the ESA.[15]
  - First listed under the ESA in 1978.
  - Listed under CITES Appendix I.
  - Recovery Plan for US population of Atlantic Green Turtle published in 1991.
- Kemp's ridley turtle (*Lepidochelys kempi*)
  - Listed as "Endangered" under the ESA throughout its range.
  - Listed under CITES Appendix I throughout its range.
  - First listed under the ESA in 1970.
  - BiNational Recovery Plan for the Kemp's Ridley Sea Turtle (*Lepidochelys kempii*), Second Revision published in 2011.
- hawksbill turtle (*Eretmochelys imbricata*)
  - Listed as "Endangered" under the ESA throughout its range.
  - Listed under CITES Appendix I throughout its range.
  - First listed under the ESA in 1970
  - Recovery Plan for Hawksbill Turtles in the U.S. Caribbean Sea, Atlantic Ocean, and Gulf of Mexico published in 1993.
- leatherback turtle (*Dermochelys coriacea*)
  - Listed as "Endangered" under the ESA throughout its range.
  - Listed under CITES Appendix I throughout its range.
  - First listed under the ESA in 1970.
  - Recovery Plan for Leatherback Turtles in the U.S. Caribbean, Atlantic, and Gulf of Mexico published in 1992.

Major threats to sea turtles in the U.S. include destruction and alteration of nesting and feeding habitats, incidental capture (bycatch) in commercial and recreational fisheries, entanglement in marine debris, and vessel strikes. Under the ESA, the taking of sea turtles in commercial fisheries is prohibited with exceptions identified in 50 CFR 223.206(d) or according to the terms

[12] "Endangered and Threatened Species Under NMFS' Jurisdiction," NOAA Fisheries, http://www.nmfs.noaa.gov/pr/species/esa/listed.htm#green2, (accessed December 29, 2016).

[13] "Recovery Plans for Endangered and Threatened Species," NOAA Fisheries, http://www.nmfs.noaa.gov/pr/recovery/plans.htm#turtles, (accessed December 29, 2016).

[14] "Recent Regulations to Protect Sea Turtles," NOAA Fisheries, http://www.nmfs.noaa.gov/pr/species/turtles/regulations.htm, (accessed December 30, 2016).

[15] On April 6, 2016, NMFS and the U.S. Fish and Wildlife Service published a final rule (81 C.F.R. 20057) removing the range-wide and breeding population ESA listings of the green sea turtle, and in their place, listing eight DPSs as threatened and three DPSs as endangered, effective May 6, 2016. Two of the green sea turtle DPSs, the North Atlantic DPS and the South Atlantic DPS, occur in the Southeast Region. These DPSs are listed as threatened. (NOAA Fisheries, personal communication).

and conditions of the ESA Section 7 Biological Opinion (BiOp).

In the wake of a NMFS report estimating that sea turtle takes by commercial bottom longline vessels exceeded allowable amounts as determined by a 2005 BiOp, an emergency rule went into effect to protect sea turtles by prohibiting the use of bottom longline gear east of Cape San Blas, Florida, shoreward of the 50-fathom contour.[16] It was during this time that the Gulf Council attempted to address an increase in these interactions through the development of Amendment 31 to the Reef Fish FMP. Initiated in 2008 and approved in 2009, Amendment 31 provided "protection for threatened loggerhead sea turtles in compliance with the ESA and to reduce sea turtle bycatch and bycatch mortality in compliance with National Standard 9 of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act)"[17] in response to "the number of loggerhead sea turtle takes authorized in the 2005 Biological Opinion by the bottom longline component of the reef fish fishery in the Gulf of Mexico have been exceeded."[18]

Amendment 31 included the following actions to reduce sea turtle take by the bottom longline component of the reef fish fishery:

(1) a prohibition on the use of bottom longline gear in the reef fish fishery east of Cape San Blas, Florida, inshore of the 35-fathom contour from June through August;
(2) a reduction in the number of bottom longline vessels operating in the Eastern Gulf through a limited access endorsement provided only to vessels with a demonstrated history of landings, on average, of at least 40,000 pounds gutted weight of reef fish annually with longline gear during 1999-2007; and
(3) a restriction of the total number of hooks that may be possessed onboard each bottom longline vessel in the Eastern gulf to 1,000, only 750 of which may be rigged for fishing.[19]

The impacts of these actions on the bottom longline fleet were severe:

1. Reduced access: the seasonal closure eliminated access to upwards of 19,000 square miles[20] of fishing grounds during peak summer months.
2. Fleet consolidation: The endorsement requirement reduced the number of longline vessels eligible to fish in the restricted area by up to 79%.[21]
3. Effort reduction: the reduction in hooks, coupled with the other measures, was to reduce effort 48% to 67%, resulting in a loss of net operating revenue between 12% and 32% per vessel for those that qualified to remain in the fishery. [22]

The result was a much smaller fleet fishing less gear- a likely result of which is fewer interactions with sea turtles. Around this same time, longline fishermen collaborated on a research project that used hook timers to evaluate catch per unit effort of sedentary forager target species (red and gag

[16] Elizabeth Scott-Denton et. al., *Descriptions of the U.S. Gulf of Mexico Reef Fish Bottom Longline and Vertical Line Fisheries Based on Observer Data,* (NOAA Fisheries, 2010), 2.
[17] Amendment 31 Final Environmental Impact Statement to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico (NOAA Fisheries; February 12, 2010), vii.
[18] Ibid.
[19] Endangered Species Act – Section 7 Consultation, Biological Opinion (NOAA Fisheries, September 30, 2011), 5.
[20] Estimated.
[21] Amendment 31 Final Environmental Impact Statement to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico (NOAA Fisheries; February 12, 2010), xiii
[22] Ibid., xi.

grouper, red snapper) as compared to roving forager non-target species like sharks and turtles. The results demonstrated that shorter soak times reduce bycatch of these non-target species,[23] which led to a general trend in the fleet to shorten longline gear soak times throughout the eastern Gulf.[24]

On October 13, 2009, NMFS completed a BiOp that analyzed the expected effects of the continued operation of the Gulf reef fish fishery under the changes proposed in Amendment 31. The BiOp concluded that sea turtle takes would be substantially reduced compared to the fishery as it was previously prosecuted, and that operation of the fishery would not jeopardize the continued existence of any sea turtle species.[25]

On December 16, 2009, NMFS received a 60-day notice of intent to sue (NOI) by a group of non-governmental organizations (Caribbean Conservation Corporation, Center for Biological Diversity, Defenders of Wildlife, Earthjustice, Gulf Restoration Network, and Turtle Island Restoration Network). The NOI alleged that NMFS was in violation of Section 7 of the ESA by failing to ensure that the ongoing operation of the Gulf bottom longline portion of the reef fish fishery would not jeopardize the continued existence of loggerhead sea turtles and other listed species and by failing to use its authority to conserve federally protected species. It also claimed that NMFS was in violation of Section 9 of the ESA for authorizing the unlawful take of sea turtles in the bottom longline sector. Additionally, it asserted that NMFS's conclusions in the 2009 BiOp were arbitrary and capricious, and not in accordance with applicable law, and therefore that opinion could not be relied upon to meet legal requirements. On December 17, 2009, the organizations filed a lawsuit in federal district court challenging the 2009 BiOp. On May 26, 2010, after their 60-day NOI had matured and after NMFS had taken final action on Amendment 31, the plaintiffs amended their complaint to allege that NMFS's continued authorization of the bottom longline fishery pursuant to the Reef Fish FMP, as amended by Amendment 31, violated the ESA.

The case was heard in the U.S. District Court for the Northern District of Florida. On July 5, 2011, the court ruled in favor of NMFS regarding the validity of the 2009 BiOp and its jeopardy analysis. However, the court also determined that the agency's September 15, 2010 reinitiation analysis was incorrect because it applied the wrong legal standard in determining whether reinitiation of consultation was required.[26]

On August 10, 2011, NMFS Southeast Regional Office (SERO) completed an ESA Section 7(a)(2)/7(d) memo determining that the continuation of the Gulf Reef Fish Fishery in the interim period between the reinitiation of consultation and the completion of a new BiOp would not jeopardize the continued existence of any species of sea turtles.[27]

On September 30, 2011, NMFS SERO completed the ESA Section 7 Consultation BiOp that was prepared in order to update portions of the 2009 BiOp and to address impacts of intervening

[23] Southeast U.S. Fisheries Bycatch Reduction Technology," NOAA Fisheries, http://www.gmri.org/sites/default/files/resource/2.6._gear_overview_and_conservation_engineering_dan_foster.pdf, 36.
[24] Jason DeLaCruz, personal communication, January 13, 2017.
[25] Endangered Species Act – Section 7 Consultation, Biological Opinion (NOAA Fisheries, September 30, 2011), 5.
[26] Ibid., 6.
[27] Ibid., 7.

events.[28] The BiOp concluded that the continued operation of the Gulf reef fish fishery is not likely to jeopardize the continued existence of green, hawksbill, Kemp's ridley, leatherback, or loggerhead sea turtles.[29]

EM

EM technology was first piloted in the Gulf on six bottom longline vessels in 2008. The commercial fishing industry collaborated with MRAG Americas Inc., NMFS Southeast Fisheries Science Center, SERO, and Archipelago Marine Research Ltd to conduct the two month study. The study concluded that EM systems can collect data that compare well with data collected by on-board observers in the Gulf longline portion of the reef fish fishery.[30]

Between 2012 and 2014, the Shareholders' Alliance partnered with the Ocean Conservancy, Mote Marine Laboratory (Mote), and Archipelago Marine Research Ltd to test EM on bottom longline and bandit vessels for the purpose of documenting catching and fishing effort. The National Fish and Wildlife Foundation (NFWF) funded this study which was entitled "Regional Capacity Building for Gulf of Mexico Reef Fish Electronic Monitoring Phase 1." Five bandit gear and two longline vessels from Galveston, Texas; Destin, FL; and St. Petersburg, FL were outfitted with EM systems and were operated for a six-month study period. Fishermen completed logbooks for each trip and event, observers were deployed on trips to validate data, and EM data were reviewed by Mote to identify all events within each trip, with a minimum of 15% of the events selected for complete catch documentation. The goal of the project was to assess EM in documenting catch and fishing effort. The project concluded that EM could be used presently to document horizontal longline fishing effort and catch with some modifications to installation and related methodologies.[31]

Building off the success of the prior two projects, Mote received additional NFWF funding in 2013 to establish an electronic monitoring center to advance regional capacity transition to EM and continued to collaborate with industry to collect EM data. The title of this project was "Electronic Monitoring in The Gulf of Mexico (GOM) Reef Fish Fishery Phase II" and this work focused on regional capacity building and integration with NMFS for future use Gulf-wide in the commercial fishery. Project oversight and execution was transferred to Mote from the Ocean Conservancy and partnerships were established with industry and management to further EM in the Gulf of Mexico and establish Mote as a local and regional EM center.

In 2016-2017, Mote partnered with Saltwater Inc., the Shareholders' Alliance, Darden/Publix, Save-On Seafood, Fishbusterz, and Waterinterface LLC to engage in the next phase of this work with a program "Accurately Assessing Catch and Bycatch with Electronic Monitoring (EM): The Gulf of Mexico Reef Fish Fishery as a Model for EM Application and Improvement." This work involved the implementation and testing of more refined EM equipment through Saltwater Inc. In

[28] Ibid., 2.

[29] Ibid., 147.

[30] "Conference Proceedings of the 6th International Fisheries Observer and Monitoring Conference," NOAA Fisheries, http://spo.nmfs.noaa.gov/tm/TM107.pdf, (July 2009), 264 (accessed December 15, 2016).

[31] "Electronic Monitoring: Pilot Study in the Gulf of Mexico Reef Fishery," Archipelago Marine Research Ltd., http://www.eminformation.com/wp-content/uploads/2014/01/Battyetal_EM-in-the-Gulf-of-Mexico.pdf (January 2014) (accessed December 15, 2016).

addition, Saltwater Inc. and Mote made significant strides in the development of review software (non-proprietary) specific for the Gulf snapper/grouper fishery.

NMFS achieved the first fleet-wide implementation of electronic monitoring in the United States in 2015 with the implementation of the Highly Migratory Species (HMS) Amendment 7, which required electronic monitoring on all (100+) vessels fishing with pelagic longline gear in the Atlantic and Gulf. The program was intended to provide an effective and efficient way to monitor and verify Atlantic bluefin tuna catches in the pelagic longline fishery, and an efficient means of verifying catches while minimizing the burden on fishermen and maintaining a viable fishery.[32] According to NMFS at the time, "Electronic monitoring technology has been tested in numerous pilot studies across the country and is now a proven solution when fisheries managers need information of all catches."[33] Saltwater Inc. was the selected equipment and review software provider for this fishery.

That same year (2015), the Shareholders' Alliance hosted a two-day commercial reef fish EM workshop in Tampa, FL, that was attended by 16 EM experts, including fishermen, NMFS and Gulf Council staff, environmental non-governmental organization representatives, scientists, and professionals with EM experience from other parts of the U.S. The workshop concluded that:

- Industry and academia have been testing EM in the Gulf for nearly a decade, working to develop linkages of EM with other fishery-dependent data.
- Technology and vendor programs continue to advance and in some cases require costly updating of pilot hardware and operations.
- NMFS and Gulf Council discussions on EM have been slow to take shape for a number of reasons including lack of resources, unclear objectives, and electronic logbook (ELB) prioritization.

Most recently, Mote received another NFWF grant to continue work on EM in 2017 and 2018. This grant will build upon prior work and will expand EM to other regions of the Gulf beyond the Madeira Beach area of FL. A primary goal of the program is to broaden the scope and depth of EM to collect and provide timely and accurate characterization of this fisheries catch (retained and discarded), interaction with protected species, and identification of bycatch "hotspots" in this valuable federally managed fishery through collaboration with vessels in Florida, Louisiana, and Texas. It should be noted that Mote included reference to this EFP in its grant application, stating that "If the SA acquires an exempted fishing permit (EFP), data based on EM will provide quality at-sea data documentation on incidental sea turtle catches." The response from NFWF was favorable, and existing NFWF grant funds will cover the cost of managing this EFP.

2.2 – Structure of the Proposed Program

Species

Participants in this program plan to target the following species:

- Red Grouper

[32] "Atlantic Pelagic Longline Fishery Electronic Monitoring Effective June 1, 2015," NOAA Fisheries, http://www.nmfs.noaa.gov/sfa/hms/news/news_list/2015/6/pll_em_info_060115.html, (accessed December 1, 2016).

[33] Ibid.

a. The species is not overfished nor undergoing overfishing.[34]
b. The fishing mortality rate has been below maximum fishing mortality threshold since 1996 except for 2005.[35]
c. The commercial sector has landed between 51% and ~100% of its allocation since 2010 with zero quota overages during that time.[36]
d. In the last three years, percent utilization of the commercial red grouper quota has declined from ~100% to 57%, presenting a challenge to achievement of OY.

Year	Commercial Quota* (lbs)	Commercial Landings (lbs)	Percent Quota Landed
2010	5,750,000	2,910,970	51%
2011	5,230,000	4,783,668	92%
2012	5,370,000	5,219,133	97%
2013	5,530,000	4,599,001	83%
2014	5,630,000	5,601,905	99.5%
2015	5,720,000	4,798,007	84%
2016	7,780,000	4,497,453	58%

*End of year quota

Participants anticipate interacting with the following non-target species:

1. Gag Grouper
2. Black Grouper
3. Yellowmouth Grouper
4. Yellowfin Grouper
5. Scamp Grouper
6. Warsaw Grouper
7. Speckled Hind
8. Snowy Grouper
9. Golden Tilefish[37]
10. Blueline Tilefish[38]
11. Red Snapper (overfished)
12. Greater Amberjack (overfished)
13. Gray Triggerfish (overfished)

Retention and reporting of non-target species will occur as allowed/required by applicable federal regulations. Regulations on non-IFQ species, including trip limits and closures, will be adhered to. IFQ species will be retained as long as there is available allocation in the vessel or associated shareholder account before landing and will be sold to a permitted dealer as per federal

[34] "Summary of the Standing and Special Reef Fish SSC Meeting," Gulf of Mexico Fishery Management Council, (January 5-6 2016), 11.
[35] Framework Action to Adjust Red Grouper Allowable Harvest (NOAA Fisheries; June 7, 2016), 1.
[36] "Commercial Quotas / Catch Allowances (all years)," NOAA Fisheries, https://portal.southeast.fisheries.noaa.gov/cs/documents/pdf/CommercialQuotasCatchAllowanceTable.pdf, 1-6 (accessed January 13, 2017).
[37] Interactions with tilefish are expected to be minimal (if any) because tilefish are generally caught in water deeper than exists in the closure.
[38] Ibid.

requirements. Based on historical fishery data and a conservative approach to this accountability measure, a minimum amount of allocation in each IFQ category will be required to be in the vessel or shareholder account prior to the trip, as follows:

- Red grouper: 15,000 pounds
- Red snapper: 2,000 pounds
- Gag grouper: 1,500
- Shallow water grouper: 1,000 pounds
- Deep water grouper: 1,000 pounds
- Tilefishes: 500 pounds

Eligibility and Participation

To be eligible to participate in this program, commercial fishermen must:

1. Have a valid reef fish permit.
2. Have a valid longline endorsement.
3. Maintain an operating VMS unit onboard.
4. Participate in the pelagic longline sea turtle handling course.
5. Attend a seminar on maintenance and operation of EM systems.
6. Have sufficient IFQ allocation in the vessel or shareholder account prior to the trip for target and non-target harvest.
7. Agree to operate by the rules/requirements of the EFP and sign a binding Operations Plan and Agreement (Ops Plan).
8. Meet the NMFS requirements for participation in an EFP.

The Shareholders' Alliance further acknowledges that participation in this program may be limited by EM hardware availability and operability.

Up to eight commercial bottom longline vessels (approximately 10-12% of the Gulf-wide fleet) homeported in the Madeira Beach area of Florida are expected to take 4-5 trips apiece during the sampling season (June, July and August) in 2017 and 2018 for a total of 32-40 trips annually for two years. These vessels plan to fish in June, July and August throughout the geographic range of the closure area on these sampling trips. Standard commercial bottom longline gear will be used as per federal regulations.

The Shareholders' Alliance will require an Ops Plan to be signed by all members. This contract will require each member to:

1. Abide by all federal fishing regulations and specific requirements required by NMFS under this EFP.
2. Account and collect data as required by NMFS and/or the Shareholders' Alliance.
3. Meet the program eligibility criteria as laid out above.

NMFS could terminate the EFP for all participants even if only a single participant is responsible for violating the terms and conditions of the EFP and/or causes sea turtle takes to exceed a certain threshold as determined by the NMFS Office of Protected Resources. *See* 50 CFR §600.745(b)(8). Accordingly, pursuant to the Shareholders' Alliance contracts and any terms and conditions outlined in the EFP, failure to abide by the applicable contractual and EFP provisions could result in: 1) warning letters, "stop fishing" orders and/or monetary penalties from the Shareholders'

Alliance, enforceable by court order; 2) expulsion from the pilot program and termination of that members' ability to participate; and 3) disclosure of the violation to NMFS along with a request to remove the offending member's vessel(s) from the list of vessels authorized to fish under the EFP (effectively terminating that member's ability to target any of the species in question for that year).

At the end of 2017, participants can choose to opt out of the pilot program and not participate for 2018. The Shareholders' Alliance is provided the flexibility to add new participants prior to the start of the 2018 fishing year within the upper limit of eight, subject to vote by the Shareholders' Alliance Board and eligibility of these participants. Those who wish to join the EFP pilot for the 2018 calendar year would be subject to the same conditions as the original participants. This decision would be made in consultation with NMFS to allow enough time to update the EFP before the start of the next fishing year.

Administration

The Shareholders' Alliance will oversee the program during the two years of operation. Roles and responsibilities include:

Shareholders' Alliance

- Ensure EFP maintains compliance with federal regulations and programmatic requirements.
- Oversee and manage program partners and participants.
- Submit annual performance reports to NMFS and the Gulf Council as appropriate.
- Report all sea turtle interactions to SERO in accordance with program protocols.

Mote Marine Laboratory

- Manage EM operations on the vessels, including installation, operations, maintenance, evaluation, data retrieval, data analysis, and reporting.
- Report all sea turtle interactions to the Shareholders' Alliance in accordance with program protocols.

SERO

- Review performance reports submitted by the Shareholders' Alliance.
- Monitor IFQ allocation for vessels engaged in EFP as per standard IFQ monitoring procedures.
- Monitor sea turtle interactions to ensure threshold in study area is not exceeded.
- Inform Shareholders' Alliance if turtle take threshold in restricted area is exceeded.

SEFSC

- Review performance reports submitted by the Shareholders' Alliance.
- Conduct federal observer program under normal protocols and coverage rates.
- Collect logbook data from vessels.
- Obtain landings data from dealers via the existing reporting systems.

Participating Fishermen

- Avoid sea turtles to the extent possible.

- Ensure operational EM systems onboard their vessels.
- Collect and report catch and effort data in accordance with federal regulations and program protocols.
- Report all sea turtle interactions immediately to the Shareholders' Alliance in accordance with program protocols.
- Immediately alert other EFP vessels operating in the restricted area according to the BHAP.
- Attend workshops and educational classes as required by the Shareholders' Alliance.

EM Operations

I. EM System Components

a. The EM technology used onboard the vessels in this EFP includes:
   i. control box
   ii. computer monitor and keyboard (user interface)
   iii. up to four closed circuit television cameras
   iv. a GPS receiver
   v. a hydraulic pressure transducer and/or magnet sensor
b. The control box receives input from the sensor and logs digital video images.
c. Cameras begin recording when the transducer registers activity (setting or retrieval of gear), capturing all activity on deck and along the rails of the vessel. Cameras are mounted on various locations on the vessels based on vessel size, and hail/discard/sorting areas, and capture images of species brought up in the gear, following them through to processing or discarding.

II. Prior to a Trip

a. The captain or owner will submit a declaration prior to leaving, as per federal requirements to fish for reef fish.
b. A system test will be conducted and logged before leaving the dock at the start of the EFP fishing trip. The vessel operator must also ensure that the system has adequate memory to record the entire trip before departing port.
c. If the EM system malfunctions before the start of an EFP trip:
   i. Call EM service provider's technical support number immediately.
   ii. The EM service provider technician will troubleshoot, and if not resolved will determine if the malfunction is critical or non-critical. A critical malfunction is one that prevents the data collection objectives of the EFP from being adequately monitored.
      1. Non-Critical EM System Malfunction: If the malfunction cannot be fixed in a timely fashion, the vessel operator may depart on the scheduled trip, but must follow the EM service provider's instructions to adjust operations for that trip, if necessary. An example of a non-critical malfunction might be a failed pressure sensor.
      2. Critical EM System Malfunction: If the malfunction is critical and not repairable, the vessel may not participate in an EFP trip. The vessel may not sail the next EFP trip until the equipment is deemed functional by the EM service provider.
   iii. Inform the Shareholders' Alliance.

III. During an EFP Trip

a. If the EM system is on and operational, the operator is responsible for keeping all cameras clean and camera view unobstructed at all times. The operator must also ensure adequate and functioning deck lighting if fishing operations are taking place at night.
b. If the EM system malfunctions at sea, the operator will attempt to contact service provider's help line by phone or by email. If a critical malfunction cannot be resolved, then the vessel must immediately exit the restricted area upon completion of the haul. The vessel may not sail on its next EFP trip until the system is deemed functional by the EM provider.
c. The operator will ensure that catch is handled according to the Ops Plan protocol.
d. The operator will fill out the following reports:
    i. Mote Vessel Data Log Form
    ii. Vessel logbook
    iii. Marine Mammal Authorization Program Mortality/ Injury Report (if an interaction occurs)
    iv. Discard logbook (if required)
e. Catch and effort data will be collected at the haul/effort level on the Vessel Data Log Form; trip-level data will continue to be collected with the vessel logbook.
f. All interactions with protected species will be documented, including the completion and submission of a Marine Mammal Authorization Program mortality/injury report form[39]. Forms are available at the following NMFS webpage:
http://www.nmfs.noaa.gov/pr/pdfs/interactions/mmap_reporting_form.pdf
g. All interactions with sea turtles will be documented and reported immediately upon release to the Shareholders' Alliance via email or phone, including but not limited to vessel location, species of turtle, and release condition. Furthermore, the operator will immediately alert other EFP vessels operating in the restricted area according to the Shareholders' Alliance BHAP protocol.
h. The captain or owner will submit an advanced landing notification 3-24 hours before landing at an approved landing location, as per federal requirements to fish for IFQ-managed species. Mote receives these data and contacts the fish house owner to confirm landing time and location.

IV. After an EFP Trip

a. Mote or an assigned subcontractor will meet the vessel at the dock and power-up the system to confirm operation. They will retrieve the vessel's hard drive as per protocol identified in the Ops Plan and return it to the laboratory for review and analysis.
b. Operators will report catch and effort data to NMFS as per federal and program reporting requirements.
c. The Shareholders' Alliance will report any turtle interactions with the appropriate individuals at SERO/SEFSC.
d. State and federal dockside sampling will continue to occur.

[39] Requirements for Category I, II, and III Fisheries, 50 C.F.R. §229.4 (accessed January 13, 2017).

BHAP

The BHAP protocol is designed to promote real-time fishing awareness and behavioral changes that reduce bycatch of non-target species. It is loosely modeled after programs in the Bering Sea[40] and New England[41] where they have demonstrated success at supporting catch of target species while reducing catch of non-target species. "Move on rules" have been extensively documented in fisheries management in the context of development of encounter protocols for deep-sea fisheries in response to United Nations General Assembly Resolution 61/105 which called for Regional Fisheries Management Organizations to prevent "significant adverse impacts to vulnerable marine ecosystems."[42] The EFP BHAP protocol incorporates real-time reporting of sea turtle interactions via electronic technology and fishing behavior modifications as follows:

1. Prior to setting gear, vessels in the program will scan the area in which they intend to set bottom longline gear for the presence of sea turtles. If sea turtles are identified in the vicinity of the vessel, the vessel will not set bottom longline gear in the immediate area.
2. Any sea turtle interactions that occur on sampling trips will be documented immediately upon the completion of the haul in the Vessel Data Log Form. This will include but not be limited to:
    a. Turtle species ID
    b. Location of interaction (degrees, minutes, seconds)
    c. Condition of turtle upon release
3. The vessel will notify every vessel participating in this EFP of the interaction, via VHF radio, satellite phone, or VMS-based email.
4. The vessel will notify the vessel owner and/or the Shareholders' Alliance of the interaction, who will then send out an official bycatch advisory to participating fishermen, vessel owners, Mote, and appropriate NMFS staff.
5. Bottom longline gear will not be reset in the immediate vicinity of the interaction for the remainder of the sampling season by the vessel in question or any other vessel participating in the sampling program.

Prohibitions

It is unlawful and in violation of this EFP for any person to do any of the followingwhile fishing under this EFP. Penalties and expulsion from the EFP may apply for these violations:

1. Take an 'EFP trip' with a vessel that does not have properly installed and functioning EM equipment.
2. Tamper with, disconnect, damage, destroy, alter, or in any way distort, render useless, inoperative, ineffective, or inaccurate any component of the EM unit required by this EFP.
3. Fail to provide a continuous power supply to the EM unit or notice to the EM provider of any interruption in the power supply to the EM unit.

[40] "Bering Sea Chinook Salmon Bycatch," http://www.npfmc.org/salmon-bycatch-overview/bering-sea-chinook-salmon-bycatch/, North Pacific Fishery Management Council, (accessed January 13, 2017).

[41] "Bycatch Avoidance Programs," https://www.umassd.edu/smast/bycatch/, University of Massachusetts Dartmouth, (accessed December 29, 2016).

[42] Daniel Dunn et. al., *Empirical move-on rules to inform fishing strategies: a New England case study,* (Fish and Fisheries, 2013), 3-7.

At the close of each of the two years of the pilot program, the Shareholders' Alliance will present a summary of program evaluation to the Gulf Council's Reef Fish Advisory Panel (AP) if requested. The AP may present its findings to the Gulf Council.

2.3 – Data Collection and Reporting

Vessel Data Collection and Reporting

Vessel operators will report catch and effort on a per-effort basis to SERO as per federal requirements and via existing reporting systems. Data will also be submitted through the Catch Share system, including declarations, landing notifications, and landing transactions. Anytime the BHAP protocol is enacted, it will be documented by the vessel owner and reported to the Shareholders' Alliance.

Federal Observer Data Collection and Reporting

The federal observer program will continue to operate under normal protocols and coverage rates. Any EFP trip that carries a federal observer will be noted, and operators will request photo copies of observer reports from the observers at the end of the trip. These copies will be forwarded to the Shareholders' Alliance.

Federal Dealer Data Collection and Reporting

Dealers will continue to report data as per federal requirements and via the existing reporting systems.

EM Data Collection and Reporting

Mote will coordinate the collection of Vessel Hard Drives and Data Log Forms from vessel trips with assistance from technical services, vessel captains, and the Shareholders' Alliance. The partners will assist in providing notification whether observer data or biological sampling data was collected from an EM designated trip. The acquisition of this data will be noted in the EM dataset information for tracking.

Hard Drives

Vessel data are recorded on removable one terabyte hard drives in onboard vessel EM processors. Hard drives are encrypted to protect vessel privacy. The data written to a hard drive includes the vessel name and identification number; trip duration (dates and time [UTC]), which relies on the captain to turn on the system when they leave the dock and off once they arrive in port, location (GPS), vessel bearings, headings, speed (hydraulic sensor); sets and hauls (drum sensor), and video footage (Internet Protocol [IP] cameras set at 10-15 fps @ 1020 dpi) triggered by the drum sensor. Filming ends within 5-10 minutes after sensory input falls below set-point threshold.

Vessel Data Log Forms

Data Log Forms as hard copies on waterproof paper or an electronic format will be provided to the captains and collected from vessels with the corresponding video hard drives. Data Log Forms include entry areas for the vessel name, captain's name, number of crew members, trip start and end date, date of fishing event, code for area fished, latitude and longitude of each set and haul, start and end time of each set and haul, sequential event number, mainline or line length, gangion length (for longline), number and hook size, primary bait used, deployment water depth, finfish species and estimate of poundage caught, kept, and or discarded [main sea turtle, finfish and shark

species encountered are pre-printed on the form], total weight estimate of each species, and discard condition [dead, alive, unable to determine]. A waterproof Species Identification Booklet will be provided to the fishermen, which includes 122 possible GOM species including sea turtles and helpful notes for identification of each species. The Data Log Forms are revised based on participants' feedback. A second set of Data Log Forms will be provided to observers through E. Scott-Denton, SESFC, for use in comparison with video reviews and captain reports.

All participants including captains, vessel owners, the Shareholders' Alliance, Mote and Mote subcontractors who handle data will sign agreements of confidentiality and will abide by established secure handling protocols for all associated data and fishermen discussions. After hard drives are reviewed they will be wiped with a disk eraser software, to provide secure formatting before they are used on the next vessel.

Data Hard Drive and Data Log Form Collection
Hard drives and Vessel Data Log Forms will be collected from vessels by Mote representatives, subcontractors, or by vessel captains and transported to a collection site. Video data and corresponding Data Log Forms will be retrieved immediately upon a vessel's return. All data will be encrypted to protect vessel privacy. Hard drives will be transported in anti-static bubble envelopes or specialty foamed-lined boxes and will include a chain of custody hard drive tracking form.

Data Hard Drive and Data Log Form Check-in at Mote
Trained Mote reviewers at Mote will review data collected during this project. Hard drives arriving at Mote will be checked in to an electronic "Master Hard Drive Tracking Workflow File" in Google Drive using the serial number, vessel identification number, and date removed from the vessel. Each hard drive is tracked from release to return to Mote. Archipelago Marine Research (AMR) equipped vessels hard drives will be copied to a master hard drive. Saltwater Inc. (SWI) equipped vessel hard drives will be pre-processed to a master hard drive. (This process will be refined to using a Network-attached storage system for copying and archiving hard drive data.) Pre-processed vessel data is saved to a designated Computer Station for processing (review) with the specific equipment software. A copy of a vessel drive will periodically be provided and audited by SWI to confirm vessel EM systems are working properly.

Data Log Forms will be checked in using the same electronic "Master Hard Drive Tracking Workflow Sheet" and reviewed for completeness (if not complete the captain will be contacted). Hard copies will be scanned and backed up electronically and electronic forms provided by fishermen will be backed up.

Vessel Hard Drive and Data Log Form Processing
Data will be reviewed by Electronic Monitoring videos review software programs provide video imagery, sensor, and GPS records along a trip timeline. As per standard Mote EM protocols evolved from input from AMR and SWI, Mote will review the sensor data to determine the number of trips on a hard drive, then mark the trip(s) start and finish points. A complete review is necessary of the sensor data to mark each event (set and haul; deployment and retrieval; experimental unit) and confirm that there is associated EM imagery available for each retrieval event. 100% of hauls will be reviewed on the trips in question. Sea turtle interactions with bottom longline gear are

generally rare events; therefore, a census-based approach is necessary to accurately capture the true impact of this EFP on sea turtle populations:

> *As EM has been used more widely, various design options have become evident. One is the census (or "black box") approach in which all vessels are monitored, in which all operations are reviewed to track fishing activities and estimate catches. A second option involves selecting a random sample of fishing events from the EM dataset, the results of which can be raised to an estimate of total catch. Although this methodology can be satisfactory as regards fleet-wide total catches, it is unsuitable for individual trips with few fishing events unless the review rate is close to 100%.*[43]

Imagery will be viewed in real time or up to approximately 16 times speed. Review time depends on the number of retained and discarded species and the video quality (dirty lens, obstructions). Reviewers will record the amount of time (start and end) required to review each trip, which includes the length of time to review each line retrieval. The quality of the images (high, medium, low, and unusable) will be recorded to provide feedback for making camera adjustments or for the vessel captain (e.g. clean camera dome casings more frequently, adjust position of handling in regard to camera view).

A customized annotation file will be used which will include a comprehensive list of all-teleost and elasmobranch species (122) encountered in by fishermen in other Mote EM projects as well as other possible species, including sea turtles. There are also categories for "Other" such as coral fragments, etc. For each sampled haul or set, information will be recorded including species identification (genus and species), utilization (retained, discarded, or unknown), and discard condition.

To document bycatch of sea turtles, they will be speciated and their disposition as 1) live - healthy appearance, 2) live - damaged, 3) dead on arrival, or 4) not determined. Fate of each sea turtle brought to the vessel alive and released or discarded will be recorded as 1) presumably alive, if it swims away, 2) as discarded dead, if it appears moribund, or sinks, or 3) unknown if undetermined.

Data logged by fishermen will be reviewed at Mote and compared with data resulting from video reviews. It is Mote policy to not compare the Data Forms to a video while reviewing as to not bias the reviewer's species identification. Hard copies of vessel Data Log Forms will be scanned and backed up electronically and electronic forms provided by fishermen will also be backed up. Data from the forms will be entered in an established Access Database™.

Mote data review protocols will continue to be improved and adapted for this study as Mote is working closely with SWI to improve their non-proprietary software for application in this fishery. Mote and Waterinterface LLC (subcontractor) will perform general statistical analysis and interpretation. Mote will preform data QA for completeness and accuracy.

The resulting data from video imagery and logged data will be used as tools to gain quantitative

[43] Richard D. Stanley et. al., *The advantages of an audit over a census approach to the review of video imagery in fishery monitoring*, (ICES Journal of Marine Science, May 9, 2011), 1, (accessed January 10, 2017).

biological reef fish bycatch data, bycatch hotspots, and vessel and gear selectivity information relative to the bottom longline and bandit rig fishery. In addition, fishery interactions with protected resources (e.g. HMS and sea turtles) will be documented, which is a recognized conservation threat in NFWF's guidelines (www.nfwf.org). Throughout the project, Mote will keep open communication with the Atlantic Coastal Cooperative Statistical Program (ACCSP) and NMFS SEFSC to ensure the resulting data meets their data requirements. Data processes will be streamlined for timeliness and quality, and evaluated for effectiveness of data protocols to ensure that they are acceptable to industry partners for management and to determine the best strategies for data transfer.

Disseminate Findings

Mote will prepare vessel-level reports to provide feedback to participants. Mote will transfer standardized fishery-dependent data to industry and management through collaboration with the GOM SA, ACCSP, and NMFS SEFSC. Data formats necessary for the specific fishery management needs will follow ACCSP acceptable "Data Collection Standards". Catch, bycatch, and discard data, summaries of lessons learned, and next-step recommendations for long-term implementation of EM in the GOM will be presented to NFWF, industry, stakeholders, and management (e.g. if requested by the NMFS SEFSC and the Gulf Council (specifically, Data Collection Committee)) through reports, presentations, and a peer reviewed publication. Addressing current bottlenecks and improving data flows will contribute quality quantitative data for improving stock assessments, and ensuring catch limits are optimized and sustainable in the long-term.

A socio-economic analysis of the effects of this change in operations using available data sources. Simultaneously, additional survey instruments will be developed to gather economic data for analysis of the impacts on Shareholders' Alliance vessels after the first and second years of the program including but not limited: trip revenues (ex-vessel), trip costs (operating expenses, wages, etc), and the introduction of new costs/benefits of this new program (additional reporting requirements, adherence to EM protocols, etc). Data collection will emphasize impacts of the pilot program, specifically the effects on trip profitability and perception of the EM program.

Video Handling, Analysis and Reporting – A Proposal.

1. Metadata: The reviewer will document any time gaps, system failures ormissing data.
2. Sample rate: 100% of the video collected on EFP trips will be reviewed to account for all sea turtle interactions.
3. Haul data: Haul end location, time, and date will be recorded for each haul. Haul end is when the last piece of gear is retrieved onto the vessel.
4. Video data: The reviewer will provide feedback on image quality of the haul (e.g., high quality, medium quality, low quality, unusable). A description of these quality levels will be in the report.
5. Discard data: Any protected species interactions will be reported to the Shareholders' Alliance.
6. EM Feedback Report: The provider will send an EM feedback report to the Shareholders' Alliance and the vessel owner for each reviewed trip. This report will provide specific feedback on each trip, including any recommended catch handling or system changes.

7. EM Discard Summary Report: The provider will submit a sea turtle interaction summary report to the Shareholders' Alliance.
8. Video handling: Hard drives will be tamper evident to preserve chain of custody. Specific details of chain of custody handling will be provided by the service provider in the Ops Plan. Once the hard drive is received by the service provider, the downloaded video and data from the hard drive will be copied, and the copy will be used for data processing or video enhancements.
9. Video ownership, access and archiving: Vessel owners own the video that is recorded on their vessels. Upon completion of video review, the vessel operator, vessel owner, and Shareholders' Alliance will be able to view the video, upon request and permission granted by the vessel owner. Until specific protocols are established, the service provider will archive all downloaded video for three years from the trip end date. NMFS staff will have access to any and all video and sensor data upon request to the provider and with permission granted by the vessel owner. Once NMFS takes possession of these data it assumes responsibility of long-term storage. The provider may retain a copy of NMFS requested video data.
10. Data confidentiality: The fishing activities recorded under this EFP are for the purpose of collecting catch information. Information about fishing activities from the EM system, including video, sensors, and GPS, will be treated as confidential, in the same manner as observer data, and consistent with the Magnuson-Stevens Act.

Data Streams

Data Source	Generated By	Distributed To	Timeline	Method	Data
Pre-Trip Fishing Declaration	Vessel	NMFS	Prior to sailing	VMS	Trip designation, gear and vessel
Vessel Logbook	Vessel	NMFS	Within 7 days of landing	Approved paper logbook form	Vessel, effort, species landed and weight estimations
BHAP Vessel Turtle Interaction Alert*	Vessel	Other vessels in the program, vessel owner, Shareholders' Alliance	Immediately upon completion of the haul in which the interaction occurred	Satellite phone or email	Vessel, location, turtle species, condition upon release
BHAP Vessel Turtle Interaction Alert*	Shareholders' Alliance	NMFS, Mote	Time TBD	Email	Vessel, location, turtle species, condition upon release
3-24 Hour Landing Notification	Vessel or owner	NMFS	3 to 24 hours before landing	If vessel, VMS or phone;	Vessel, approved landing location, dealer, time of landing, weight

				If owner, phone or IFQ website	of fish by share category
Vessel Data Log Form	Vessel	Mote	Immediately upon landing	Approved paper form	Vessel, catch, and effort data including sea turtle interactions
Marine Mammal Authorization Program Mortality/ Injury Report	Vessel	NMFS Office of Protected Resources	Within 48 hours of landing	Approved paper form	Vessel, location, gear, turtle species, condition upon release
NMFS Discard Report**	Vessel	NMFS, Mote	Within 7 days of landing	Separate approved form	Vessel, location, species catch and number of fish, average weights of individual fish, and discard conditions and reason, gear, area, depth
Federal Observer Report**	Observer	NMFS, Mote	Upon landing	Photocopies of raw paper datasheets	Vessel, location, gear, effort, catch and species including sea turtle interactions
Dealer IFQ landings Transaction / State Trip Ticket	Dealer	State fisheries agency	Tuesday of the week following the landing	Electronic database	Vessel information, species landed and recorded weights
Mote EM Bycatch Report	Mote	Vessels in the program, Shareholders' Alliance	After each trip	Agreed-upon forms	Sea turtle interactions
Mote EM Performance Report	Mote	Vessels in the program, Shareholders' Alliance	After each trip	Agreed-upon forms	EM performance

EFP Performance Report	Shareholders' Alliance	NMFS	Time TBD but no later than 6 months after conclusion of the EFP	As agreed upon with NMFS	As agreed upon with NMFS, including catch and any other information required

*if an interaction occurs
**if selected for coverage

The primary source of sea turtle interaction data will be the BHAP. EM and additional data streams will be used to verify these industry self-reported data.

Primary Data Sources:

1. **BHAP Vessel Turtle Interaction Report**
    a. Participating vessels alert owner and Shareholders' Alliance via email or phone call if an interaction occurs (immediately after the completion of the haul).
    b. Shareholders' Alliance then alerts Mote and NMFS via email.
2. **Vessel Data Log Form**
    a. Participating vessels complete form prior to vessel landing.
    b. Mote or an approved subcontractor retrieves the form immediately upon vessel landing.

Data Validation

1. **EM Video Analysis and Review**
    a. Mote retrieves EM hard drives immediately upon vessel landing.
    b. Mote reviews EM video and compares to Vessel Data Log Form.
2. **Mote EM Bycatch Report**
    a. Mote submits a trip-level EM Bycatch Report to the Shareholders' Alliance via email.
    b. Shareholders' Alliance immediately submits the EM Bycatch Report to NMFS via email.

2.4 – Impacts and Justification

The activities conducted under the EFP are consistent with the intent of the EFP requirements and the management objectives of the FMP and other applicable laws. The robust reporting and data collection protocols, as well as regular and transparent communication with NMFS, will help ensure that this EFP will not create a significant enforcement problem. The impacts of this proposal will not detrimentally affect the well-being of the stock of any regulated species of fish, marine mammal, threatened or endangered species, or essential fish habitat (EFH):

Valued Ecosystem Components	Effects of the Proposed Action
Habitat - Hard bottom - EFH	**Positive, but minor** – expanded distribution of bottom longline effort distributes any impacts over a wider area, thereby minimizing disturbance; **Neutral** – no additional effort will occur in EFH areas.

Protected Resources - Sea turtles - Marine mammals - Endangered species	**Positive** – continued increase in protection for sea turtles; **Neutral** – any increase in overall effort has minimal impacts on marine mammals and endangered species because the Gulf bottom longline fishery is identified in the List of Fisheries as a Category III (lowest impact).
Managed Resources - Groupers and Tilefish - Other species	**Positive** – increase in effort on red grouper (not overfished or experiencing overfishing); **Neutral** – increase in catch of other species accounted for under existing regulations.
Commercial Fishermen - Captains - Crew - Owners	**Positive** – possible loss of revenue if sea turtle interactions occur offset by increase in profitability.
Fishing Communities	**Positive** – increase profitability of red grouper-dependent communities that experienced significant economic loss as a result of Amendment 31 (Madeira Beach, Florida).
Administration	**Negative, short term** – additional monitoring and oversight required for program operations. **Positive, long term** – commercial sector driven management enhances monitoring and enforcement.

The success of this program is anticipated to generate strong biological, social, and economic benefits to the participants, while conserving and protecting sea turtles.

Biological

This EFP request is timely in that nearly every year, the commercial sector falls short of achieving optimum yield for the red grouper portion of the reef fish fishery. Between 2011 and 2015, 83% to 97% of the red grouper quota was landed, resulting in between 28,905 pounds and 930,999 pounds remaining unharvested annually.[44] In 2016, 3,282,547 pounds of red grouper remained unharvested primarily due to a 36% increase in allocation on October 12, 2016.[45] These fish could have been sustainably-harvested without undermining the rebuilding and health of the red grouper population. Allowing responsible and well-monitored access to the restricted area is anticipated to generate higher landings of red grouper than the trips that take place during those months outside of the area (presently). This is because the habitat inside the restricted area is believed to be more suitable for red grouper fishing than in the offshore area. This can be seen when looking at the

[44] "Commercial Quotas / Catch Allowances (all years)," NOAA Fisheries, https://portal.southeast.fisheries.noaa.gov/cs/documents/pdf/CommercialQuotasCatchAllowanceTable.pdf, 1-6 (accessed January 13, 2017).

[45] Ibid.

levels of red grouper landings from trips inside the area (but outside the restricted season) as compared to trips outside the area (during and before/after the restricted season).

All species of sea turtles in the Gulf are listed as "endangered" or "threatened" and are therefore in need of protection from a range of human impacts. Utilizing EM will improve data collection on the interactions of sea turtles and bottom longline gear, which should lead to a more accurate assessment of human-induced mortality. Furthermore, requiring program participants to attend a pelagic longline sea turtle release class and adhere to the BHAP protocols should directly and indirectly (fishing behavior modifications) help to reduce discard sea turtle mortality. Finally, approval and operation of this program will raise awareness for sea turtle protection among the participants in the bottom longline portion of the reef fish fishery, especially if these protections are leveraged by increased access to red grouper and more profitable fishing trips.

Economic

The participating commercial bottom longline fishermen stand to improve the profitability of their trips through successful implementation of this program. This, in turn, could lay the groundwork for a more comprehensive EM program that could demonstrate increased profitability across a larger commercial fleet. As mentioned above, the alternative to fishing in this restricted area during the months in question is to travel farther offshore to access red grouper in habitat that is less conducive to red grouper. Lower landings and catch per unit effort, coupled with increased operating costs of fishing farther offshore, results in a reduced profit margin for these vessels. Allowing responsible and well-monitored access to the restricted area will reduce operating costs and increase landings, thereby improving the profitability of the trip.

A number of studies have shown that EM can be a cost-effective data collection and enforcement tool. Testing these systems in the Gulf for the purpose of protected species interaction documentation can start to put a value on the program and identify where added costs may occur with a more robust data collection protocol that could formally supplement or replace human observers.

Social

This program is in a unique position to generate substantial industry investment in real-time monitoring and reporting programs (specifically EM) as well as launch a comprehensive discussion on developing and implementing EM in the Gulf. This is because a successful EFP will provide information useful for future management decisions regarding EM. It is anticipated that these data will show an increase in profitability and an increase in industry interest in EM. Such demand could elevate the development of EM specifications in the Southeast Region, which could lean heavily on the advancements in EM being made by the Alaska and Greater Atlantic Regions of NMFS.

Regulatory

The Magnuson-Stevens Act establishes National Standards for Fishery Conservation and Management that must be applied to all fishery management plans. This program addresses several in particular:

National Standard 1: *Conservation and management measures shall prevent overfishing while*

achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry.

A 36% increase in red grouper allocation in late 2016 left nearly 3.3 million pounds of red grouper unharvested and unless there are substantial changes in the fishery, we anticipate there could be unharvested allocation in 2017 and beyond. . This EFP will allow increased harvest of red grouper through an accountable IFQ system that has demonstrated a perfect track record of preventing overharvests. Any increase in harvest of additional IFQ species will be accounted for under the IFQ program, while any increase in harvest of non-IFQ species will be managed through existing input-controlled management programs (e.g. season lengths, trip limits, etc).

National Standard 2: *Conservation and management measures shall be based upon the best scientific information available.*

Science is a dynamic process, and new scientific findings constantly advance the state of knowledge. Best scientific information is, therefore, not static and ideally entails developing and following a research plan. The data which led to the implementation of the restricted area were collected in prior to 2008. Since that time, no additional bottom longline data have been collected in the restricted area during the restricted months. This EFP will generate much needed data to fill a nearly-10-year gap in that dataset. Furthermore, it will generate a dataset on EM operations and usage that should inform and expedite EM implementation in the Gulf. EM is already being used for improved scientific information including bycatch accounting in the pelagic longline fishery, maximized retention in the west coast whiting fishery, and automatic species identification in the Alaska halibut/cod fishery – we believe that implementation of this EFP will facilitate similar conversations in the Gulf and will raise the bar for the collection of "best scientific information available."

National Standard 4: *Conservation and management measures shall not discriminate between residents of different states. If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be (a) fair and equitable to all such fishermen, (b) reasonably calculated to promote conservation, and (c) carried out in such a manner that no particular individual, corporation, or other entity acquires an excessive share of such privilege.*

Residents of any state may participate in this EFP provided they meet the approved eligibility criteria for the program and there are EM systems available for their vessel. No allocations will be made, although a minim amount of IFQ allocation will be present in the vessel's or shareholders' account prior to sailing a trip. Therefore, establishing an IFQ account and holding a federal permit is a necessary requirement for a vessel to participate in the program

National Standard 5: *Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose.*

Management regimes that allow a fishery to operate at the lowest possible cost for a particular catch level are considered efficient. Restrictive measures that unnecessarily raise any of those

costs – including restricting access and redirecting effort farther offshore – move the program toward inefficiency. Successful operation of this EFP within the area in question will increase the economic efficiency of the fleet as compared to the costs for operating a trip offshore during that same time period. Further, we anticipate that allowing access during these previously prohibited months will relieve the quasi-derby experienced by the bottom longline fleet as it races out September 1 to operate in this area, resulting in a market glut and fish price impacts. An added benefit will be that these eight vessels are unlikely to compete for fishing ground outside the area during these months, which reduces conflict among vessels. Overall, the potential for increased profitability of a fishing trip is substantial enough to convince fishermen to test EM systems onboard their vessels. As mentioned earlier, the biological and social gains that can be achieved through this program are important and considered strong factors in EFP interest.

National Standard 6: *Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.*

This program does present some unique uncertainties that come with accessing a restricted area where a gear type has been prohibited for some time. That being said, this EFP provides protections against these uncertainties by utilizing EM systems to record data on these trips and to ensure enforcement, implementing more fine-scale and near-real-time reporting requirements, and launching a BHAP to allow a timely response to needs on the water. A robust data collection program is critical to ensuring flexibility and accountability in this EFP.

National Standard 8: *Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social data that meet the requirements of paragraph (2), in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.*

Fishing communities benefit most from sustained and sustainable fishery access. Such a large restricted area closure demonstrated negative short-term economic impacts on the fishing communities and businesses of Florida's west coast.[46] Providing responsible and well-monitored access to this area while providing for protections for sea turtles can improve the social and economic conditions of these communities that are dependent on the grouper fishery and traditionally fish in these area. We also believe that there will be added socio-economic benefits to taking 10-12% of the fleet that is otherwise concentrated in an offshore area outside the closure, and redistributing that effort into a broader geographic area.

National Standard 9: *Conservation and management measures shall, to the extent practicable, (A) minimize bycatch and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.*

Bycatch can impede efforts to protect marine ecosystems, and achieve sustainable fisheries and the full benefits they can provide to the Nation. This EFP proposes to address this problem through

[46] Amendment 31 Final Environmental Impact Statement to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico (NOAA Fisheries; February 12, 2010), 208.

a four-pronged approach to improve reporting protocols (catch and effort, effort-level, near-real-time), test promising technology (EM), educate fishermen (attendance at a pelagic longline turtle release program), and the implement a BHAP (to modify fishing behavior) in order to minimize sea turtle interactions. Further, mandating a de minimis amount of IFQ allocations to be present in the vessel/shareholder account prior to sailing a trip addresses concerns with discarding due to insufficient allocation. In general, the benefits of this program will be felt beyond the EFP as fishermen better understand how to avoid sea turtles and sea turtle mortality while engaging in commercial fishing operations. Further, through the development of this EFP and the eventual implementation of this data collection/enforcement tool, we believe the Gulf will be able to follow the lead of the west coast and Alaska and begin to legitimately test concepts like full retention and automated speciation.

National Standard 10: *Conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.*

Fishing is an inherently dangerous occupation that is often identified as one of (or the) most dangerous jobs in the Nation. The dangers associated with the implementation of this restricted area are most likely realized due to commercial bottom longline vessels having to travel farther offshore during June, July and August in order to prosecute a trip. Allowing responsible and well-monitored access to a nearshore area will mitigate those dangers. We also believe that there will be safety value in taking 10-12% of the fleet that is otherwise concentrated in an offshore area outside the closure, and redistributing that effort into a broader geographic area.

3. For each vessel to be covered by the EFP, as soon as the information is available and before operations begin under the EFP:

(A) A copy of the USCG documentation, state license, or registration of each vessel, or the information contained on the appropriate document.

(B) The current name, address, and telephone number of the owner and master, if not included on the document provided for the vessel.

In accordance with 50 C.F.R. §600.745(b)(2)(iv), the Shareholders' Alliance will provide the final list of up to eight active vessels to NMFS, including their USCG documentation and ownership information, as soon as that information is available and before operations begin under the EFP.

4. The species (target and incidental) expected to be harvested under the EFP, the amount(s) of such harvest necessary to conduct the exempted fishing, the arrangements for disposition of all regulated species harvested under the EFP, and any anticipated impacts on the environment, including impacts on fisheries, marine mammals, threatened or endangered species, and EFH.

The target species for vessels operating in this program will be red grouper. Non-target species are anticipated to be:

1. Gag Grouper
2. Black Grouper
3. Yellowmouth Grouper
4. Yellowfin Grouper
5. Scamp Grouper
6. Warsaw Grouper
7. Speckled Hind
8. Snowy Grouper
9. Golden Tilefish[47]
10. Blueline Tilefish[48]
11. Red Snapper (overfished)
12. Greater Amberjack (overfished)
13. Gray Triggerfish (overfished)

Since members will be harvesting within the commercial allocation and there will be a minimum amount of allocation per category in the appropriate account(s) prior to the start of any trip, there will be no additional impacts to the commercial fisheries for the species in question.

The EFP will not cause any additional impacts to marine mammals, threatened or endangered species, or essential fish habitat. Compared to the number of participants in the Gulf of Mexico commercial reef fish fishery, the number of vessels participating in the program is minimal and any changes to sea turtle interactions are therefore likely to be minimal. The "Southeastern U.S. Atlantic, Gulf of Mexico, and Caribbean snapper-grouper and other reef fish bottom longline/hook-and-line" fishery is classified in the 2016 Marine Mammal Protection Act List of Fisheries as a Category III.[49] This classification indicates how the annual mortality and serious injury of a marine mammal stock resulting from the fishery is less than or equal to 1% of the potential biological removal of impacted species (i.e. a remote likelihood of or no known incidental mortality and serious injury of marine mammals). Since overall fishing effort is not likely to change significantly, existing analyses of commercial fishing impacts under the current FMP should not change as a result of this EFP. In the rare event that an interaction should occur, it will be noted in the Vessel Data Log Form and Marine Mammal Authorization Program Mortality/ Injury Report.

5. For each vessel covered by the EFP, the approximate time(s) and place(s) fishing will take place, and the type, size, and amount of gear to be used.

The EFP would be in effect for two years (2017 and 2018), based upon the timeliness of the approval of this EFP. The effective start date for fishing operations under this program would occur on June 1 and would end on August 31 annually for the two years listed above, as per the existing bottom longline seasonal closure time period.

[47] Interactions with tilefish are expected to be minimal (if any) because tilefish are generally caught in water deeper than exists in the closure.
[48] Ibid.
[49] 2016 Marine Mammal Protection Act List of Fisheries, 80 C.F.R., 58427 (September 20, 2015) (accessed January 13, 2017).

While some fishing operations will take place outside of the seasonal closure area (to provide for a comparative analysis of gear variables being tested), a majority of effort will occur inside the reef fish bottom longline seasonal closure management area in the portion of the Gulf EEZ east of 85°30' W. long. that is shoreward of rhumb lines connecting, in order, the following points:

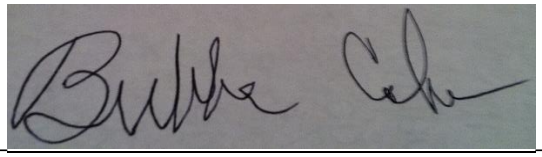
Point	**North lat.**	**West long.**
A	28°58.70′	85°30.00′
B	28°59.25′	85°26.70′
C	28°57.00′	85°13.80′
D	28°47.40′	85°3.90′
E	28°19.50′	84°43.00′
F	28°0.80′	84°20.00′
G	26°48.80′	83°40.00′
H	25°17.00′	83°19.00′
I	24°54.00′	83°21.00′
J	24°29.50′	83°12.30′
K	24°26.50′	83°00.00′

All fishing will take place on licensed and documented commercial fishing vessels with typical commercial bottom longline gear

As noted above, the Shareholders' Alliance seeks approval for up to eight vessels to participate in the pilot program described in this EFP. To date, the following vessels have expressed interest in participating in the program:

1. TBD
2. TBD
3. TBD
4. TBD
5. TBD
6. TBD
7. TBD
8. TBD

6. The signature of the applicant.



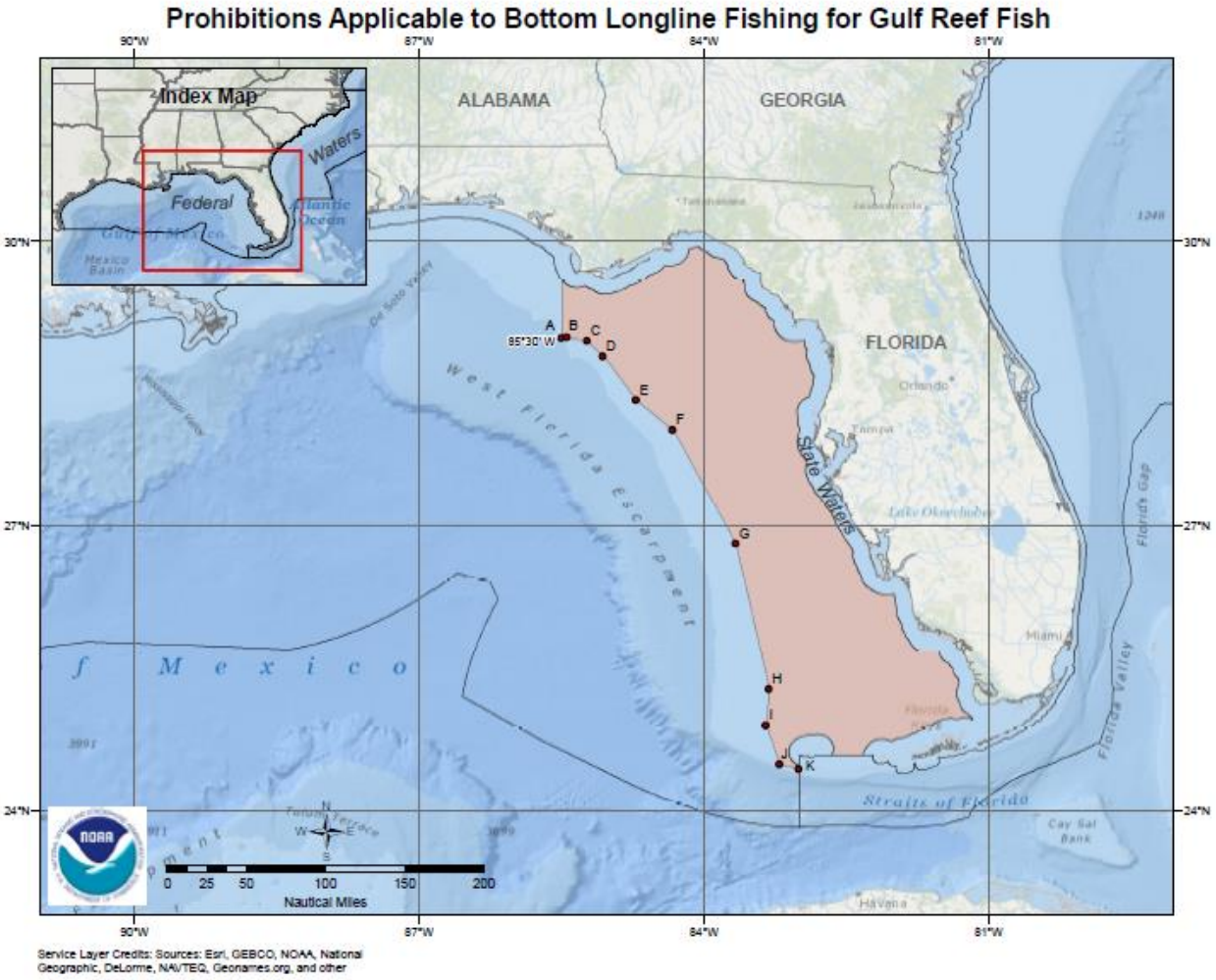
Bubba Cochrane, President
Gulf of Mexico Reef Fish Shareholders' Alliance

Appendix A
EFP Work Plan.

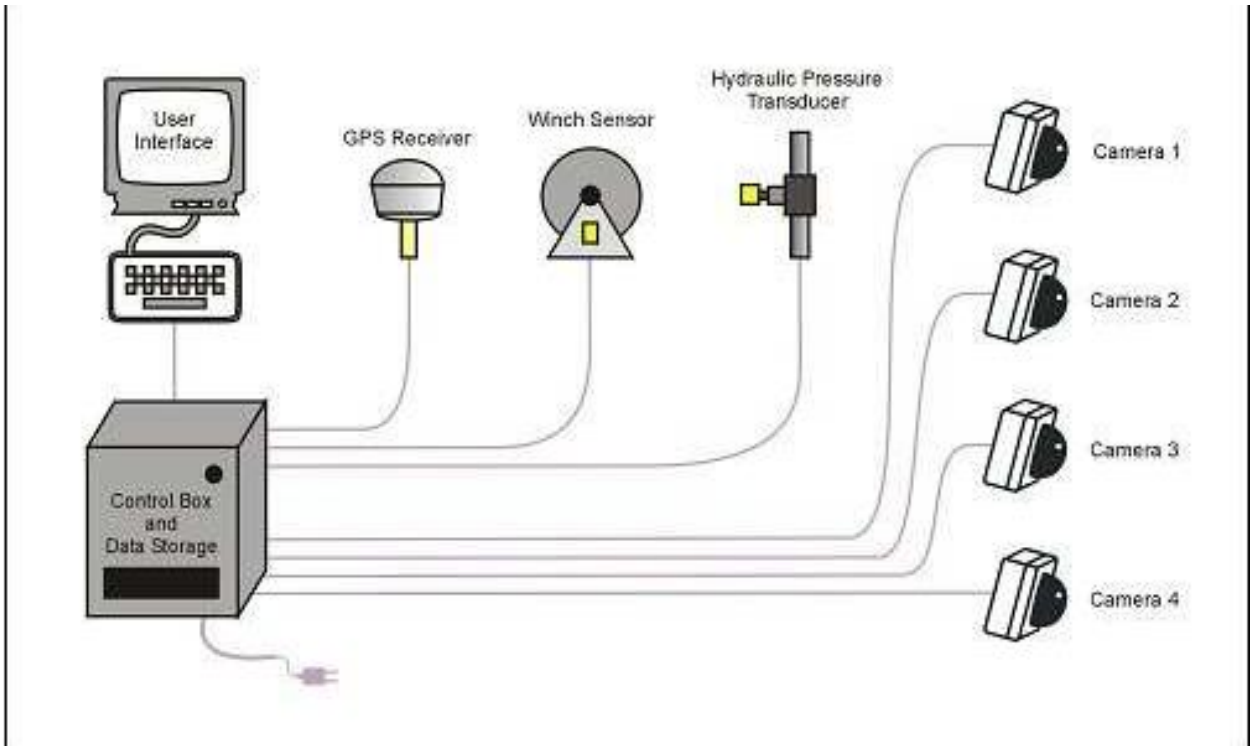
		2017												2018											
Task	**Responsible**	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**
Submit EFP for Council review	Shareholders' Alliance																								
Hardware installation and testing	Mote																								
Federal approvals process	NMFS																								
Protocol refinement	Mote, Shareholders' Alliance																								
Approval of EFP	NMFS																								
Development of Ops Plan and contracts	Shareholders' Alliance																								
Sign contracts	Fishermen participants																								
Season 1 data collection	Fishermen participants, Mote																								
Season 1 review and analysis	Mote, NMFS																								
Season 2 preparation	Mote, Shareholders' Alliance																								
Season 2 data collection	Fishermen participants, Mote																								
Season 2 review and analysis	Mote, NMFS																								

Appendix B

Map of Seasonal Prohibition Applicable to Bottom Longline Fishing for Gulf Reef Fish.



Appendix C
Photos of Installed EM Systems and Video Outputs.[50]



Electronic Monitoring Vessel Setup includes Control Center, Display Screen, GPS Receiver mounted on Cabin Roof, Winch Drum Sensor, Hydraulic Pressure Sensor, Ethernet Switch (not shown) and Cameras.

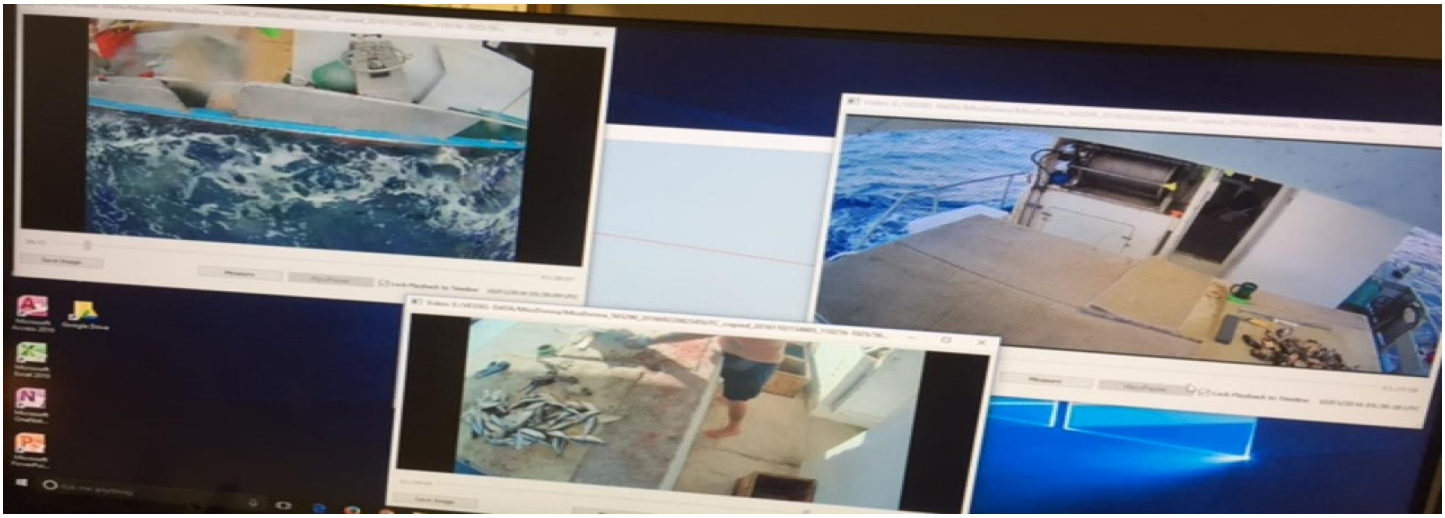
Two digital cameras w/ LED lights.

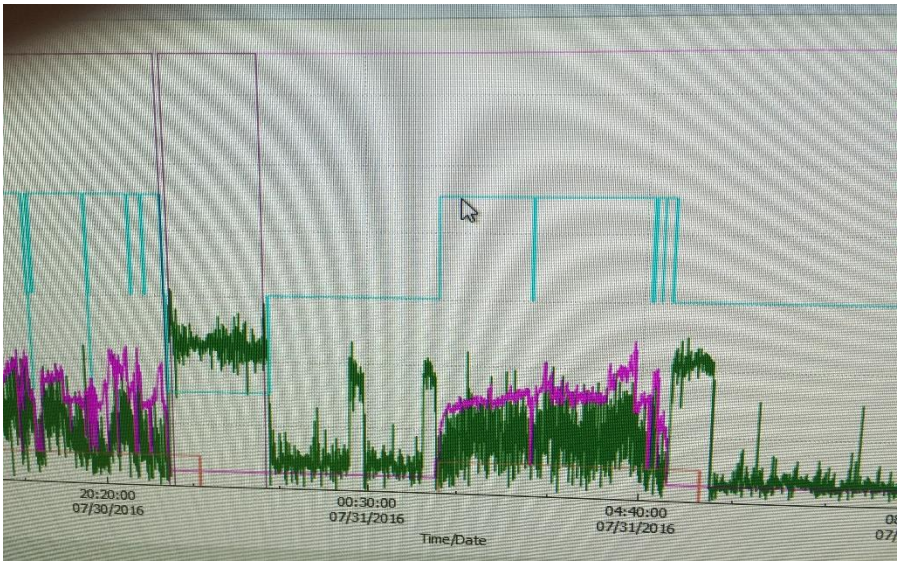
Computer processor and monitor installed on cabin ceiling.

Processor installed in mid-cabin with Ethernet for cameras.

[50] Permission was granted by the vessel owner to share and publish these photographs in this document. Photos and images courtesy of Mote Marine Lab.

Magnet Sensors Detect Reel Set or Haul.





Example Lab vessel processing screen views include 3-4 camera views; sensor graphics for trip, hauls, and sets; location map of vessel movement; photo image management file.